

In the Specification:

Please add a new heading at page 1, above line 2, as follows:

TITLE OF THE INVENTION

Please add a new heading at page 1, above line 4, as follows:

FIELD OF THE INVENTION

Please replace the paragraph at page 1, lines 4 to 6, with a replacement paragraph amended as follows:

The invention relates to [[a]] an automatic gearbox, for a motor vehicle, with infinitely-variable ratio, which may be operated in a constant speed mode, or an acceleration mode.

Please add a new heading at page 1, above line 8, as follows:

BACKGROUND INFORMATION

Please replace the paragraph at page 1, lines 8 to 18, with a replacement paragraph amended as follows:

Infinitely-variable gearboxes, which are also called CVT-gearboxes (continuously variable transmission), are based on the principle of belt drives, in which the transmission ratio between the shortest and longest transmission ratio is infinitely-variable with the aid of a so-called variator. An infinitely-variable ratio of this type is best suitable for an optimum exploitation of the torque produced by the engine. As the ratio is

infinitely-variable, an adequate ratio is always provided for an efficiency-oriented driving characteristic, but also for a consumption-oriented or sporty driving characteristics characteristic, in which the engine can work in the optimum operating range.

Please replace the paragraph at page 1 line 33 to page 2 line 5, with a replacement paragraph amended as follows:

An automatic gearbox with the above discussed general conventional features of the preamble of claim 1 is described in the article "Multitronic - the new automatic gearbox of Audi" (ATZ Automobile technical magazine, 2000, edition 7/8 and 9). This CVT-gearbox can be operated either in a constant speed mode, or in an acceleration mode. In the constant speed mode depending on the driving situation a fixed desired revolution speed is predetermined, which depends for example on the speed or the inclination.

Please add a new heading at page 2, above line 22, as follows:

SUMMARY OF THE INVENTION

Please replace the paragraph at page 2 line 30 to page 3 line 7, with a replacement paragraph amended as follows:

Different from the conventional gearbox, in which all changes of the revolution speed in the acceleration mode take place in infinitely-variable manner, the revolution

[[the]] speeds according to the invention are predetermined such that so as to create a similar impression as with a gearbox ~~in steps is created~~ having shifting steps. If the driver triggers a change of the revolution speed by more or less strongly activating the acceleration pedal in the acceleration mode, then the transition to the new revolution speed is effected by a jump or leap of the revolution speed, which is effected within a very short time interval. In this way the infinitely-variable automatic gearbox according to the invention reacts like a manually shifted gearbox or an automatic gearbox with regulating or shifting steps.

Please replace the paragraph at page 4, lines 30 to 35, with a replacement paragraph amended as follows:

The automatic gearbox according to the invention can be formed designed and constructed such that in the acceleration mode ~~as far as up~~ to achieving the maximum speed, five to ten, in particular seven regulating or shifting steps are provided. By the multiple volatile or jump-like or step-like reductions reduction of the revolution speed, a particularly sportive sporty and dynamic driving impression is created.

Please replace the paragraph at page 5, lines 15 to 28, with a replacement paragraph amended as follows:

A particularly high ease of use can be achieved with the automatic gearbox according to the invention, if the stepped change of the revolution speed can be activated subject to the selected driving program. For instance it may be provided that the stepped change of the revolution speed according to the invention can be activated ~~merely~~ only in the driving program S, which means a ~~sportive~~ sporty driving ~~characteristics~~ characteristic. In the driving program D, however, the stepped change of the revolution speed cannot be activated and the automatic gearbox behaves like a conventional CVT-gearbox. The appropriate driving program, in which the stepped change of the revolution speed can be activated, can conveniently and expediently be selected by activating a transmission selector lever for the individual driving programs.

Please replace the paragraph at page 5 line 30 to page 6 line 4, with a replacement paragraph amended as follows:

It may, however, also be provided that the stepped change of the revolution speed in the acceleration mode can be activated automatically subject to the driving characteristics. For instance, ~~sportive~~ the driver's ~~desire or intention for sporty~~ driving characteristics can be detected with the aid of the longitudinal or lateral acceleration and of further parameters. Therewith it is

possible to effect the stepped change of the revolution speed according to the invention dependent upon the situation, e.g. if ~~an efficiency-oriented, sportive a driver's intention for a power-oriented, sporty driving characteristics~~ characteristic has been recognized.

Please replace the paragraph at page 6, lines 6 to 12, with a replacement paragraph amended as follows:

It may also be provided that ~~in case of~~ a conventional automatic gearbox ~~[[the]] can be retro-fitted or after-equipped with the inventive~~ stepped change of the revolution speed ~~can be upgraded by an update of the simply by updating or changing the shift control software. The software for the gearbox control is stored in a flash memory, which can be reprogrammed in case of need. if needed.~~ In this way it is possible to update older automatic gearboxes to the newest state of the art of the software.

Please add a new heading at page 6, above line 17, as follows:

BRIEF DESCRIPTION OF THE DRAWINGS

Please replace the paragraph at page 6, lines 17 to 20, with a replacement paragraph amended as follows:

Further advantages and details of the invention will be described ~~[[taken]]~~ in conjunction with the figures and an

example [[of]] embodiment. The figures are schematic drawings, in which

Please replace the paragraph at page 6, lines 22 to 23, with a replacement paragraph amended as follows:

Fig. 1 shows a revolution speed-velocity-diagram of a conventional CVT-automatic gearbox; [[and]]

Please replace the paragraph at page 6, lines 25 to 26, with a replacement paragraph amended as follows:

Fig. 2 shows a revolution speed-velocity-diagram of [[a]] first and [[a]] second example of embodiment embodiments of the invention [[-]] ; and

Please add a new paragraph at page 6, following line 26, as follows:

Fig. 3 shows a schematic block representation of a vehicle having an automatic gearbox, a control device and software according to an example embodiment of the invention.

Please add a new heading at page 6, above line 28, as follows:

DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS OF THE INVENTION

Please replace the paragraph at page 6, lines 28 to 32, with a replacement paragraph amended as follows:

Fig. 1 shows a revolution speed-velocity diagram of a conventional CVT-automatic gearbox. The driving speed v is

entered on the horizontal axis, the engine or motor revolution speed n on the vertical axis. Above [[from]] the n-v diagram the respective position of the acceleration pedal is shown.

Please replace the paragraph at page 6 line 34 to page 7 line 9, with a replacement paragraph amended as follows:

The automatic gearbox ~~built in a motor vehicle with infinitely-variable ratio, which is built into a motor vehicle,~~ can be operated in a constant speed mode or in an acceleration mode. In the constant speed mode 1 the gearbox [[has]] provides and maintains a fixed desired engine revolution speed, which is predetermined subject to the driving situation. If, by activating the acceleration pedal, a distinct distinctly higher performance or power is required than is necessary for constant driving, ~~it is changed then the gearbox or transmission changes~~ into the acceleration mode 2. The constant speed mode 1 permits consumption-favorable or fuel-efficient driving in the stationary steady-state driving operation, in contrast to which the acceleration mode 2 permits spontaneous and dynamic driving.

Please replace the paragraph at page 7, lines 11 to 21, with a replacement paragraph amended as follows:

When shifting into the acceleration mode 2, a speed leap 3 is effected, then the increased revolution speed is further

increased in infinitely-variable manner. Above [[from]] the revolution speed-velocity-diagram, the course of the angle of the acceleration pedal is shown. It can be seen that the revolution speed is increased as long as the driver keeps further pushing down the acceleration pedal. ~~pushed through~~. As soon as the acceleration pedal is ~~kept~~ constantly, held constant, merely only a low infinitely-variable increase of the revolution speed is effected, whereby the desired revolution speed is asymptotically approached.

Please replace the paragraph at page 7, lines 31 to 35, with a replacement paragraph amended as follows:

Fig. 2 shows the revolution speed-velocity-diagram of a first and a second example [[ef]] embodiment of the invention. The diagram of the first example [[ef]] embodiment is drawn as a dashed line, while the diagram of the second example [[ef]] embodiment is drawn as a continuous line. These embodiments are carried out in an automatic gearbox of a motor vehicle, and the operating modes of these different embodiments can be embodied or specified through control software being executed in a control device that controls the automatic gearbox, as schematically represented in Fig. 3.

Please replace the paragraph at page 8, lines 1 to 7, with a replacement paragraph amended as follows:

During the transition into the acceleration mode, the constant speed mode 1 and the revolution speed leap 3 correspond to those of Fig. 1. ~~Other than the given values~~ Deviating from Fig. 1, in the first example embodiment shown by the dashed line in Fig. 2, a revolution speed increase ~~is made~~ occurs due to an increase of the angle of the acceleration pedal, in addition to the infinitely-variable revolution speed increase 7, via a stepped shift-down down-shift 8.

Please replace the paragraph at page 8, lines 9 to 16, with a replacement paragraph amended as follows:

Subsequent to the revolution speed increase 7, a revolution speed leap 8 is made, [[as]] because the driver continuously further pushes down the acceleration pedal. ~~is continuously pushed through.~~ The volatile revolution speed increase corresponds to the shifting down with a conventional manual shifting transmission or with a conventional stepped automatic transmission. The driver has the impression that the gearbox shifts to a lower gear and the vehicle has an improved acceleration.

Please replace the paragraph at page 8, lines 18 to 27, with a replacement paragraph amended as follows:

Then an infinitely-variable increase of the revolution speed 9 is made, which proceeds ~~analogue~~ analogously to the course described in Fig. 1. If the acceleration pedal is ~~slowed-down-up~~ released or backed-off to a threshold value, then the revolution speed is lowered via a step 10 in a volatile or leap-like manner, so that the impression of an up-shifting gearbox is obtained. Then the revolution speed in section 11 is slightly increased. If the acceleration pedal is [[kept]] merely held constant, then the automatic gearbox passes into the constant speed mode 6 via a further revolution speed leap 12.

Please replace the paragraph at page 8, lines 29 to 30, with a replacement paragraph amended as follows:

An example [[of]] embodiment of the hybrid mode with fixed gears is shown in Fig. 2 by the continuous line.

Please replace the paragraph at page 8 line 32 to page 9 line 16, with a replacement paragraph amended as follows:

~~Subsequent to Following~~ the revolution speed leap 3 during the transition from the constant speed mode 1 into the acceleration mode, a revolution speed increase 13 is made with a "virtual constant ratio" as further discussed below. This ratio is adjusted by control of the variator of the automatic gearbox. The ratio must not necessarily comply

or correspond with that of a real actual physical stepped gearbox, instead a "virtual" linear transmission ratio can be recognized in that its linear extension does not pass through the zero point or origin of the revolution speed-velocity-diagram. Thus, the motor revolution speed and the vehicle driving speed are not directly proportional to one another. Instead, the linear transmission ratio is defined by the linear expression $n = mv + b$, wherein n is the motor revolution speed, v is the vehicle driving speed, m is the linear slope of the "virtual" linear transmission ratio characteristic, and b is the "virtual" positive or negative motor revolution speed offset from zero for a vehicle driving speed of zero with this linear transmission ratio characteristic. Thus, b represents the intersection point of the extended linear characteristic with the vertical n -axis. This revolution speed increase 13 corresponds to a gear, which is defined by its minimum revolution speed and its maximum revolution speed. After falling below the minimal speed exceeding the maximum revolution speed for this gear, a revolution speed leap 14 is made, which is felt by the driver like a shifting down. down shift. Then the revolution speed is further increased in the next gear 15 up to a maximum value. The subsequent volatile or leap-like revolution speed reduction 16 is felt like a shifting up, an up shift, which is followed by a revolution speed increase 17 in the next gear. The final driving speed is achieved by several successive shifting and accelerating processes as is the case with a standard

manual shifting transmission or a conventional stepped automatic transmission.

Please replace the paragraph at page 9, lines 18 to 24, with a replacement paragraph amended as follows:

This hybrid mode with fixed gears is activated, if the driving program S is selected. As an alternative it can be activated also in the driving program D, if the longitudinal and/or lateral acceleration of the vehicle exceeds a fixed threshold value. In this acceleration mode, particularly sportive sporty driving is possible, [[what]] which conveys a dynamic driving impression to the driver.

[RESPONSE CONTINUES ON NEXT PAGE]